UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,971	03/14/2007	Arnaud Dessis	296657US0PCT	5706

22850 7590 07/12/2010

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
POLYANSKY, ALEXANDER	
ART UNIT	PAPER NUMBER
1793	

NOTIFICATION DATE	DELIVERY MODE
07/12/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/593,971	DESSIS ET AL.	
	Examiner	Art Unit	
	ALEXANDER POLYANSKY	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-19 remain for examination. Claims 1-18 have been amended. Claim 19 is new.

Status of Previous Objections/Rejections

The objection to claim 1 has been withdrawn in view the amendment to claim 1 line 4 filed April 14, 2010.

The 35 U.S.C. 103(a) rejection of claims 1-5, 8-13, and 15-17 as being unpatentable over Fukuda et al. US 5,976,282 in view of Schoen et al. US 5,702,539 has been withdrawn in view the amendment to claim 1 line 8 requiring less than one percent oxygen in the flushing gas filed April 14, 2010.

The 35 U.S.C. 103(a) rejection of claims 6-7 as being unpatentable over Fukuda et al. US 5,976,282 in view of Schoen et al. US 5,702,539 and further in view of Pronk et al. US 6,109,336 has been withdrawn in view the withdrawal of Fukuda as a primary reference.

The 35 U.S.C. 103(a) rejection of claims 14 and 18 as being unpatentable over Fukuda et al. US 5,976,282 in view of Schoen et al. US 5,702,539 and further in view of Koza et al. US 2004/0079398 has been withdrawn in view the withdrawal of Fukuda as a primary reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-5, 15-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchinaga et al. JP 2003-342798 (machine translation) in view of Schoen et al. US 5,702,539 and Brockington et al. US 4,744,837.

Regarding claim 1, Tsuchinaga teaches a process for the continuous manufacture of a stainless steel strip (title, abstract, pars. 1 and 5) with an arithmetic mean roughness Ra of 0.5 microns (par. 6) of the annealed/pickled type comprising:

subjecting a cold-rolled (pars. 1and 5) stainless steel strip to an annealing step (heat treatment) with a flushing gas (N_2 par. 14) with a dew point of -15 to -40°C (abstract) circulating chosen from inert or reducing gases. Even though the dew point temperature of Tsuchinaga does not overlap the claimed dew point above -15°C, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See MPEP 2144.05(I).

Tsuchinaga further teaches no oxygen or air presence thus meeting the less than 1% oxygen and less than 1% air by volume limitation.

Tsuchinaga teaches pickling the strip having undergone the heat treatment (par. 14), using an acid pickling solution suitable for completely removing the oxide scale according to its thickness and its nature (par. 14).

Tsuchinaga teaches the heat treatment steps to include a heating phase at a heating rate V1 (table 1 temperatures), and a soak phase at a temperature T for a soak time M (table 1, 918°C for 136 sec).

Even though Tsuchinaga teaches obtaining a strip with an oxide layer which is then immersed in a acid pickling bath (example 1) to remove the oxide layer, Tsuchinaga does not

specify the step of a cooling phase at a cooling rate V2 in order to obtain a strip covered with an oxide layer.

Schoen teaches a method of production of an austenitic steel strip (abstract and claims) wherein the steel strip is subjected to a cooling step at a cooling rate V2 in order to obtain a strip covered with an oxide layer (Schoen claim 5 and col. 10, lines 5-7).

It would be obvious to one of ordinary skill in the art to modify the process of making an austenitic steel in Tsuchinaga by incorporating the cooling step as taught in Schoen in order to obtain a strip that is austenitic phase (Schoen col. 9, lines 43-67).

With respect to the limitation having a dull surface appearance with a brightness of less than 30, Tsuchinaga teaches the roughness of less than or equal to 0.5 microns (abstract), and further, since the stainless steel of Tsuchinaga is treated in a substantially similar manner as claimed in claim 1, Tsuchinaga's strip would be expected to have a dull surface appearance with a brightness of less than 30.

Even further with respect to the brightness value as claimed, since Tsuchinaga is concerned with stabilizing the surface granularity and teaches that the surface appearance can be improved by duration of annealing and by adjusting the concentrations of nitric acid and hydrofluoric acid during pickling after final annealing (par. 8); therefore, it would be obvious that the claimed brightness would be attainable by an ordinary skilled artisan by optimizing such variables as duration of annealing and by adjusting the concentration of the pickling solution. See MPEP 2144.05(II)(B).

With regard to the claimed austenitic stainless steel strip, Tsuchinaga in view of Schoen teaches the steel is austenitic (Schoen col. 9, lines 43-67).

Even though Tsuchinaga in view of Schoen teaches annealing, Tsuchinaga does not specify the type of furnace used.

Brockington teaches bright annealing of austenitic stainless steels in a strongly reducing environment (title, abstract, fig. 1 and accompanying text) wherein the annealing of the steels is performed in a bright annealing furnace in order to avoid dulling of the metal surface by formation of a film containing chromium oxide (abstract).

It would be obvious to one of ordinary skill in the art to modify the process of Tsuchinaga in view of Schoen by incorporating the bright annealing furnace of Brockington in order to avoid dulling of the metal surface by formation of a film containing chromium oxide (abstract).

Regarding claim 4, Tsuchinaga teaches the flushing gas is nitrogen (par. 14), which meets the claimed group.

Regarding claim 5, Tsuchinaga in view of Schoen and Brockington teaches all the claimed features to include,

heat treating the strip and soaking the strip (Tsuchinaga Table 1) and cooling the strip at greater than 10°C/sec (Schoen claim 5 and col. 10, lines 5-7).

Further with regard to the steps and rates as claimed in claim 5, since Tsuchinaga in view of Schoen teaches that in order to obtain an austenitic phase strip it is desirable to carry out the heating, soaking and cooling at a predetermined temperature and a predetermined time and cooling at 23°C/sec (Schoen, which meets the claimed range of greater than 10°C/sec), the claimed heat treatment steps of heating, soaking, and cooling are result-effective variables in terms of affecting the microstructure (Schoen col. 9, lines 18-22, *inter alia*) of the steel strip

(austenite) and it would be obvious to one of ordinary skill in the art to optimize the heating rate, soaking temperature and duration and the cooling rate in order to obtain the desired microstructure in the steel which is austenite (Schoen col. 9, lines 43-67, claim 5, and col. 10, lines 5-7).

Regarding claim 15, Tsuchinaga in view of Schoen and Brockington teaches immersing the austenitic stainless steel in a pickling bath (Tsuchinaga par. 9, Schoen col. 9, lines 43-67) containing the acid pickling solution.

Regarding claims 16-17, Tsuchinaga teaches the pickling bath is 80°C (par. 9), which is within both ranges of claims 16 and 17.

Regarding claim 19, Tsuchinaga in view of Schoen and Brockington teaches that in the pickling step the oxide layer is completely removed from the strip covered with an oxide layer (Tsuchinaga par. 19, for example).

Claim 1-2, 4-5, 15-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchinaga et al. JP 2003-342798 in view of Schoen et al. US 5,702,539 and Brockington et al. US 4,744,837 as applied to claim 1 above and further in view of Fukuda et al. JP 08-269754 (machine translation).

If it is not taken that the rejection set forth under the previous heading meets the claimed dew point range, the following alternative rejection is set forth:

In the alternative, with regard to the dew point recitation of above -15°C as claimed in line 7 of claim 1, assuming *arguendo* that Tsuchinaga does not teach the dew point of above -15°C, Fukuda teaches a process for the continuous manufacture of a steel strip (title, abstract) wherein the conditions are maintained in a strongly reducing atmosphere with a dew point in the

range of -10°C or below (par. 6) overlapping the claimed dew point range of above -15°C. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. See MPEP 2144.05(I). Fukuda '754 goes on to describe that the thickness of the scale generated on the surface of the stainless steel, the degree of concentration of each element in the interface, and the oxide layer are influenced by the dew point of an annealing atmosphere. And, if the dew point of a reducing atmosphere becomes higher than -10°C, the oxide layer would become too thick affecting the descaling nature and corrosion resistance of the steel (Fukuda '754 par. 27).

It would be obvious to modify the annealing atmosphere of Tsuchinaga in view of Schoen and Brockington with the nitrogen circulating in the furnace having a dew point of -10°C or below with expected results because Fukuda teaches substantially the same process in a substantially similar environment.

Regarding claim 2, Tsuchinaga in view of Schoen and Brockington does not teach the claimed dew point range.

Fukuda '754 teaches a continuous manufacture of a stainless steel strip by annealing and pickling the cold-rolled strip (title, abstract) wherein Fukuda's process is maintained in a strongly reducing atmosphere with a dew point in the range of -10°C or below (par. 6). Fukuda '754 goes on to describe that the thickness of the scale generated on the surface of the stainless steel, the degree of concentration of each element in the interface, and the oxide layer are influenced by the dew point of an annealing atmosphere. And, if the dew point of a reducing atmosphere becomes higher than -10°C, the oxide layer would become too thick affecting the descaling nature and corrosion resistance of the steel (Fukuda '754 par. 27).

It would be obvious to modify the annealing atmosphere of Tsuchinaga in view of Schoen and Brockington with the nitrogen circulating in the furnace having a dew point of -10°C or below with expected results because Fukuda teaches substantially the same process in a substantially similar environment.

Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchinaga et al. JP 2003-342798 in view of Schoen et al. US 5,702,539 and Brockington et al. US 4,744,837, or alternatively, Tsuchinaga et al. JP 2003-342798 in view of Schoen et al. US 5,702,539 and Brockington et al. US 4,744,837 and Fukuda et al. JP 08-269754 as applied to claim 1 above and further in view of Fukuda et al. US 5,976,282.

Regarding claim 8, Tsuchinaga in view of Schoen and Brockington does not specify the nitric acid and hydrofluoric acid pickling solutions.

Fukuda '382 teaches a continuous manufacture of an austenititic stainless steel strip by annealing and pickling the cold-rolled strip (title, abstract, example 1) wherein Fukuda '382 teaches that the pickling solution comprises hydrofluoric and nitric acid solutions (example 1, col. 10, lines 38-51) in order to improve the surface brightness, polishing properties and corrosion resistance of a cold-rolled steel (col. 3, lines 53-64).

It would be obvious to one of ordinary skill in the art to modify the pickling process of Tsuchinaga in view of Schoen and Brockington with the hydrofluoric and nitric acids solution of Fukuda '382 in order to improve the surface brightness, polishing properties, and corrosion resistance of a cold-rolled steel (Fukuda col. 3, lines 53-64).

Regarding claim 9, Fukuda teaches nitric acid and ferric ions (example 1).

Regarding claims 10-11, Fukuda teaches an acid mixture of 50 g/l nitric acid and 35 g/l hydrofluoric acid. It is noted that the nitric acid concentration is less than the claimed 60 to 140 g/l in claim 10, and 80 to 120 g/l in claim 11.

However, since Fukuda teaches that the surface brightness, polishing properties and corrosion resistance of a cold-rolled plate can be improved by suppressing the intergranular erosion and surface defects in the processing steps and by adjusting the concentrations of nitric acid and hydrofluoric acid during pickling after final annealing (col. 3, lines 14-64), the claimed the concentrations of nitric and hydrofluoric acid are result-effective variables in terms of affecting the surface brightness of the steel strip (col. 3, lines 54-57, *inter alia*), and it would be obvious to one of ordinary skill in the art to optimize the concentrations of those acids in order to achieve the desired surface brightness. See MPEP 2144.05(II)(B).

Regarding claims 12-13, Fukuda teaches an acid mixture of 35 g/l hydrofluoric acid and 30 g/l Fe, which are within the claimed hydrofluoric acid and ferric ions concentrations as claimed.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchinaga et al. JP 2003-342798 in view of Schoen et al. US 5,702,539 and Brockington et al. US 4,744,837, or alternatively, Tsuchinaga et al. JP 2003-342798 in view of Schoen et al. US 5,702,539 and Brockington et al. US 4,744,837 and Fukuda et al. JP 08-269754 as applied to claim 1 above and further in view of Pronk et al. US 6,109,336.

Regarding claim 6, Tsuchinaga in view of Schoen and Brockington does not specify the heat treatment device is an induction heating device.

Pronk teaches the manufacture of steel strip with an austenitic phase, wherein the furnace apparatus is an induction furnace, which is used in order to compensate for the heat loss that occurs mainly on the surface, and provide for temperature homogenization (Pronk col. 4, lines 61-65).

It would be obvious to one of ordinary skill in the art to modify the process of Tsuchinaga in view of Schoen and Brockington by using the induction heating device of Pronk in order to compensate for the heat loss that occurs mainly on the surface, and provide for temperature homogenization (Pronk col. 4, lines 61-65).

Regarding claim 7, Tsuchinaga in view of Schoen and Brockington does not specify the heat treatment device is a resistance heating device.

Pronk teaches the manufacture of steel strip with an austenitic phase, wherein the furnace apparatus is a resistance furnace, which is used in order to supply the energy directly to the strip, so that the surface of the strip is heated again due to heat loss to the surroundings (Pronk col. 6, lines 15-20).

It would be obvious to one of ordinary skill in the art to modify the process of Tsuchinaga in view of Schoen and Brockington by using the resistance heating device of Pronk in order to supply the energy directly to the strip, so that the surface of the strip is heated again due to heat loss to the surroundings (Pronk col. 6, lines 15-20).

Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuchinaga et al. JP 2003-342798 in view of Schoen et al. US 5,702,539 and Brockington et al. US 4,744,837, or alternatively, Tsuchinaga et al. JP 2003-342798 in view of Schoen et al.

US 5,702,539 and Brockington et al. US 4,744,837 and Fukuda et al. JP 08-269754 as applied to claim 1 above and further in view of Koza et al. US 2004/0079398.

Regarding claim 14, Tsuchinaga in view of Schoen and Brockington does not specify that in order to pickle the austenitic stainless steel strip, the strip is sprayed with the acid pickling solution.

Koza teaches a method of pickling a stainless steel strip (par. 20) wherein the acid pickling solution is sprayed on the steel strip in order to make the pickling step continuous and to prevent spots from forming (Koza abstract, pars. 4, 9, and etc.).

It would be obvious to one of ordinary skill in the art to modify the process of pickling in Tsuchinaga in view of Schoen and Brockington by incorporating the pickling solution prayers of Koza in order to make the pickling step continuous and to prevent spots from forming (Koza abstract, pars. 4, 9, and etc.).

Regarding claim 18, Tsuchinaga in view of Schoen and Brockington does not specify the time during which the strip is in contact with the pickling solution is between 10 sec and 2 min.

Koza teaches a method of pickling a stainless steel strip (par. 20) wherein Koza teaches that the pickling of steel is a process for removing scale and continuous sheets of steel are typically carried through several acid baths by immersing the strip completely in the baths for sufficient time to remove the scale (Koza par. 3). Therefore, the time during which the strip is in contact with the pickling solution is a result-effective variable and it would be obvious to one of ordinary skill in the art to optimize the contact time with the strip and the pickling solution in order to sufficiently remove the scale. See MPEP 2144.05(II)(B).

Allowable Subject Matter

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Claim 3 is allowable because the cited prior art does not teach or suggest a process for the continuous manufacture of an austenitic stainless steel strip having a dull surface appearance with a brightness of less than 30 and an arithmetic mean roughness Ra of greater than 0.12 microns of the annealed/pickled type, the process comprising a flushing gas having a dew point of between -5 and 10°C and comprising less than 1% oxygen and less than 1% air by volume.

Fukuda '754, the closest reference that teaches the dew point of -10°C and below, teaches away from anything above -10°C as required by claim 3 by stating that, if the dew point of a reducing atmosphere becomes higher than -10°C, the oxide layer would become too thick affecting the descaling nature and corrosion resistance of the steel (Fukuda par. 27).

Response to Arguments

Applicant's arguments filed April 14, 2010 have been fully considered but they are not persuasive.

(I). Applicants submit that Fukuda discloses an austenite stainless steel plate having excellent surface brightness, without polishing after finishing annealing in a combustive gas atmosphere and pickling for descaling the strip. Fukuda at abstract. Fukuda discloses that conventionally finish annealing is carried out in a strongly reducing atmosphere containing H_2 and N_2 (bright annealing process) or in a combustive gas atmosphere. Fukuda at column 1, lines

28-45. Fukuda teaches away from the bright annealing process as costly. Fukuda at column 1, lines 36-37. Instead, Fukuda focused on annealing in a combustive gas atmosphere. Fukuda discloses in Examples 1-3 that the combustive gas atmosphere contains 3 vol% O_2, 7 vol% CO_2, 20 vol% moisture and 70 vol% N_2. Fukuda's combustive gas atmosphere contains 132,000 ppm by mass of H_2O. However, Fukuda is silent about H_2O in a bright annealing process atmosphere containing H_2 and N_2. Furthermore, Fukuda fails to suggest annealing in a furnace in a reducing atmosphere having a moisture content given by a dew point above -15°C. Moreover, Fukuda fails to suggest annealing in a furnace in a combustive gas atmosphere containing less than 1% oxygen by volume and less than 1% air by volume. Thus, Fukuda fails to suggest the independent Claim 1 limitations of subjecting a cold-rolled austenitic stainless steel strip to a heat treatment in a bright annealing furnace inside which a flushing gas chosen from inert or reducing gases and having a dew point above -15°C circulates, said flushing gas comprising less than 1% oxygen by volume and less than 1% air by volume".

In response, because the Examiner has withdrawn Fukuda '282, any and all arguments with regard to Fukuda '282 are moot. However, assuming *arguendo* that Fukuda has been reapplied, but for different reasons, i.e. Fukuda's ('282) hydrofluoric and nitric acids solution was used in the pickling step, Fukuda '282 is merely used to show that such conventional method of pickling the steel using hydrofluoric and nitric acids solution is practiced in order to improve the surface brightness, polishing properties, and corrosion resistance of a cold-rolled steel (Fukuda col. 3, lines 53-64).

(II). Applicants submit that Schoen, Pronk and Koza fail to remedy the deficiencies of Fukuda. Schoen is cited for disclosing a cooling rate. Office Action at page 4, lines 4-9. Pronk is

cited against dependent Claims 6-7 for disclosing an induction furnace and a resistance furnace. Office Action at page 7, lines 6-9; 16-19. Koza is cited against dependent Claims 14 and 18 for disclosing that strip can be sprayed with pickling solution for sufficient time to remove scale. Office Action at page 8, lines 8-20. However, Schoen, Pronk and Koza fail to suggest that Fukuda's strongly reducing atmosphere containing H_2 and N_2 should contain H_2O or that Fukuda's combustive gas atmosphere should contain less than 3 vol% O_2.

In response, because the Examiner has applied a new rejection with a modification of the stated references, i.e. Schoen, Pronk and Koza, the new combination meets the recited features in the amended claims as stated above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER POLYANSKY whose telephone number is (571)270-5904. The examiner can normally be reached on Monday-Friday, 8:00 a.m. EST - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander Polyansky/
Examiner, Art Unit 1793

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 1793